

FINAL TECHNICAL REPORT

"Literature Review, Data Set Identification and  
Compilation of Data of the Groundfish Fishery in the  
South Atlantic and the Gulf of Mexico"

Submitted by:

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and

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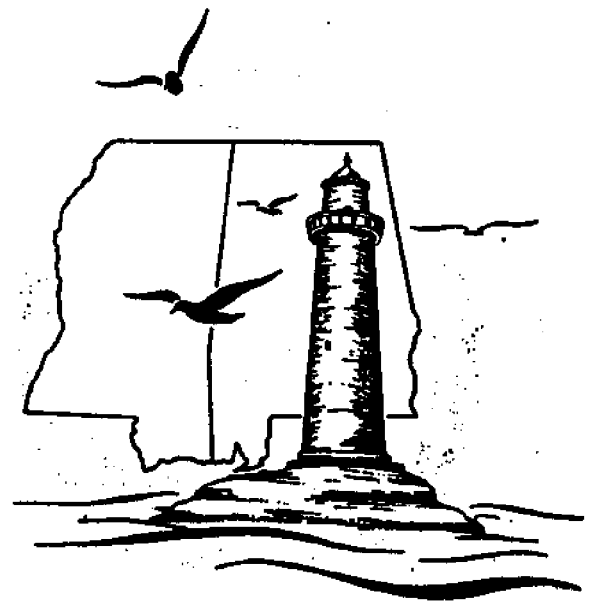
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MISSISSIPPI-ALABAMA  
SEA GRANT CONSORTIUM

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MASGP-82-025

Final Technical Report

"Literature Review, Data Set Identification and Compilation of Data of the Groundfish Fishery in the South Atlantic and the Gulf of Mexico."

MASGC Project Number: R/RD-1

Principal Investigator: Dr. Edward J. Harrison  
Associate Investigator: Ms. Teresa C. Heaton

Duration of Project: April 1, 1981 - June 30, 1982

Reporting Period: April 1, 1981 - June 30, 1982

## Abstract

A bibliography on nine groundfish species was assembled in computerized format. Each citation contains a brief summary and keyword identifiers. Holders of existing research data and the general nature of their data were identified by a mail questionnaire. Both of these efforts focused on U.S. waters from Chesapeake Bay southward to the Texas/Mexico border, but some information from other areas is also included.

A copy of the final data tape can be purchased for \$60.00 from the Mississippi-Alabama Sea Grant Consortium's "Coastal Information Management System" at the following address:

Marine Environmental Sciences Consortium  
P.O. Box 369-370  
Dauphin Island Sea Lab  
Dauphin Island, Alabama 36528

Order reference: Dr. Edward Harrison's data file.

The fee is inclusive of all related costs (i.e., supplies, computer time, transportation and handling).

## I. Introduction

In April 1981 the initial phase of a three-year program to locate and compile existing information on nine species of groundfish was begun. The project was funded through the Mississippi-Alabama Sea Grant Consortium with Saltenstall-Kennedy monies appropriated by the Pascagoula Laboratory of the National Marine Fisheries Service.

The project was designed to assist fishery managers and researchers by producing two major end items: (1) an annotated bibliography, with keyword identifiers, containing citations to all relevant publications, theses, reports, etc., on the target species listed in Table 1, and (2) a data base representing a compilation of existing field data on these species collected by university, governmental, and private researchers and rearranged into a common format to facilitate computer analyses. Both end items were to be delivered in computer-ready form (i.e. on punch cards or magnetic tape).

The minimum goals for the first year were to produce the portion of the bibliography covering literature for the coastal areas of Alabama, Mississippi, and Louisiana, and to locate sources of existing data in this same area. Federal budget restrictions have made the second and third phases (years) of the project impossible, but accomplishments for the first phase exceeded expectations. The resulting annotated bibliography cites literature on the Atlantic coast from Chesapeake Bay southward to Florida and the entire Gulf of Mexico coast of the United States. (A few exceptional publications from other areas are also included). The search for existing research data covered the same geographic area that is represented in the bibliography.

Table 1. Groundfish species selected for inclusion in the Groundfish Bibliography.

<u>Scientific names</u>	<u>Common names</u>
<u>Arius felis</u>	Sea catfish
<u>Cynoscion arenarius</u>	Sand seatrout
<u>Cynoscion nothus</u>	Silver seatrout
<u>Leiostomus xanthurus</u>	Spot
<u>Micropogonias undulatus</u>	Atlantic croaker
<u>Peprilus burti</u>	(Gulf) butterfish
<u>Peprilus triacanthus</u>	Butterfish
<u>Stenotomus caprinus</u>	Longspine porgy
<u>Trichiurus lepturus</u>	Atlantic cutlassfish

## II. Location of Research Data

We decided to use a mail questionnaire to locate sources of research data. This was the most economical way of contacting a large number of people, and it provided a convenient and consistent means for cataloging the results. Several factors were considered in an attempt to encourage broad participation in the survey.

1. Several references (Table 2) were consulted to obtain addresses of universities, colleges, agencies, firms, etc., that might have conducted research on the target species. When possible, the questionnaires were addressed to an individual rather than to an institution. When a reference used did not provide an individual's name, a telephone call to the institution's operator frequently solved the problem.

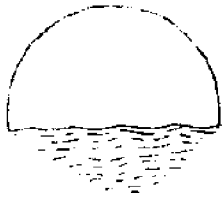
2. The cover letter (Exhibit 1) that accompanied the questionnaire was individually addressed and briefly described the project. The addressee was encouraged to pass the letter along if someone else in the organization was a more appropriate respondent.

3. The questionnaire (Exhibit 2) was designed so that most of it could be completed with check marks. As a result, only a few seconds were required to complete the questionnaire. The return address was included and return postage was provided.

4. About three months after the first mailing approximately 30% of the questionnaires had not been returned, so a followup letter (Exhibit 3) and a second copy of the questionnaire were sent to each of the nonrespondents. Following the second mailing, the total response rose to 90%. We assumed that the remaining 10% were not recoverable.

Table 2. References consulted to obtain a mailing list for questionnaires.

1. Education directory, colleges and universities 1980-1981 by C. R. Smith and G. C. Davis. National Center for Education Statistics, 400 Maryland Ave., S. W. Washington, D.C. 20202. 1981.
2. Lovejoy's College Guide. 15th edition - revised & updated, by C. Lovejoy. Simon and Schuster, N.Y., N.Y. 1981.
3. Barron's Profiles of American Colleges, 12th ed., Vol. I: Descriptions of the colleges. Compiled and edited by the College Division of Barron's Educational Series, Inc. Woodbury, N.Y. 1980.
4. Industrial Research Laboratories of the United States, 16th edition. Jaques Cattell Press/R. R. Bowker Co., N.Y., N.Y. 1979.
5. Research Centers Directory: A guide to university related and other non-profit research organizations, 6th revised edition, M. Palmer, editor. Gale Research Co., Book Tower, Detroit, MI. 1979.
6. NMFS Directory - The NOAA Organization Directory, July, 1979.
7. Conservation Directory 1980, 25th anniversary edition. J. Bryant, editor. The National Wildlife Federation, 1412 Sixteenth St., N.W., Washington, D.C. 20036.

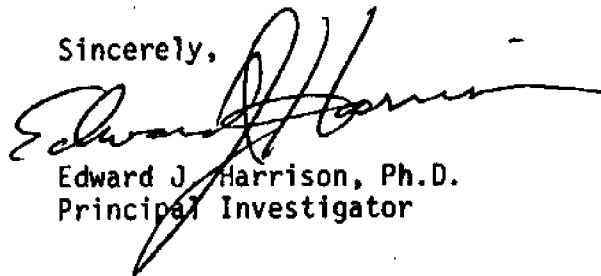


Dr. John Doe  
Department of Fishery Science  
Mississippi State University  
Mississippi State, MS 39762

The Mississippi State University Research Center is conducting a program to locate existing data on several species of groundfish. This program is sponsored by the Mississippi-Alabama Sea Grant Consortium and is intended to provide resource managers with information on data that have been accumulated through previous or ongoing research efforts. Your organization has been identified to us as one that may have conducted research on one or more of the target species. Therefore, we are seeking your cooperation by asking you to complete and return the enclosed questionnaire. If another person in your organization is more familiar with the research on the species of interest, please do us the favor of passing this letter on to them.

Your assistance will be greatly appreciated. Thank you.

Sincerely,



Edward J. Harrison, Ph.D.  
Principal Investigator

EJH/hm

Enclosure as stated

Exhibit 1



TO:

Dr. John Doe  
 Department of Fishery Science  
 Mississippi State University  
 Starkville, MS 39762

- A. Do you have data on one or more of the following groundfish species from either prior research or research now being conducted? (please check as appropriate)

	<u>Prior Research</u>	<u>1981 Research</u>
1. Atlantic croaker ( <u>Micropogonias undulatus</u> )	_____	_____
2. Spot ( <u>Leiostomus xanthurus</u> )	_____	_____
3. Silver seatrout ( <u>Cynoscion nothus</u> )	_____	_____
4. Sand seatrout ( <u>Cynoscion arenarius</u> )	_____	_____
5. Sea catfish ( <u>Arius felis</u> )	_____	_____
6. Atlantic cutlassfish ( <u>Trichiurus lepturus</u> )	_____	_____
7. Longspine porgy ( <u>Stenotomus caprinus</u> )	_____	_____
8. Butterfish ( <u>Peprilus burti</u> )	_____	_____
9. " ( <u>Peprilus triacanthus</u> )	_____	_____
10. None of the above	_____	_____

If your organization has no data, there is no need to complete the remainder of the questionnaire. However, please return it to us so that we may record your response.

B. What is the general nature of the data?

- Life history, population dynamics \_\_\_\_\_
- Catch data (commercial or recreational) \_\_\_\_\_
- Distribution and movements \_\_\_\_\_
- Food habits \_\_\_\_\_
- Age and growth \_\_\_\_\_
- Economic or sociologic factors \_\_\_\_\_
- Other \_\_\_\_\_

C. Geographic region covered.

- Northern Gulf of Mexico (AL, MS, LA) \_\_\_\_\_
- Texas \_\_\_\_\_
- Atlantic Coast (NC, SC, GA) \_\_\_\_\_
- Florida \_\_\_\_\_
- Other (please specify) \_\_\_\_\_

D. In what form do the data exist?

- Recorded on field data sheets \_\_\_\_\_
- Computer punch cards \_\_\_\_\_
- Magnetic tape \_\_\_\_\_
- Contained in in-house reports \_\_\_\_\_
- Contained in published reports \_\_\_\_\_
- Other (please specify) \_\_\_\_\_

- E. Please give the name, address and phone number of the person(s) in your organization who is (are) responsible for and most familiar with these data.

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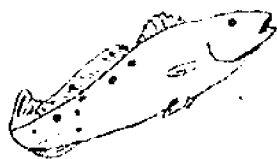
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Please refold, close with a staple or tape and place in mail.

Thank you.

Mississippi State University Research Center  
National Space Technology Laboratories  
NSTL Station, Mississippi 39529

Exhibit 2d

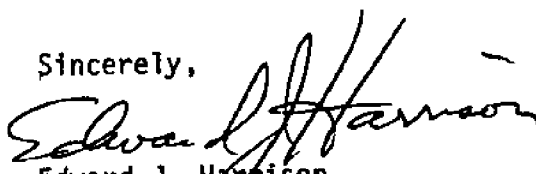


Dr. John Doe  
Department of Fishery Science  
Mississippi State University  
Starkville, MS 39762

Last summer we sent you a questionnaire pertaining to our groundfish data search. So far about 70% of the questionnaires have been returned. Although 70% return is quite good, we would like to try to locate the remaining 30%. Undoubtedly some of these unanswered questionnaires were passed along to colleagues who had already received one by another route. Others may have been misplaced or just put aside to be completed when activity slackened. If yours has not been returned to us, please take a moment to complete the enclosed copy. Perhaps you do not have data on the species of interest - that too is important information for us. If you passed your original questionnaire on to someone else, please indicate that to us so we can contact them.

Thank you for your cooperation.

Sincerely,



Edward J. Harrison  
Principal Investigator

EJH/hm

Enclosure as stated

Exhibit 3

A list of all agencies and institutions contacted during the data search and the persons who either received the questionnaires or to whom we were referred by the recipient is on file at the Mississippi-Alabama Sea Grant Consortium office. Copies of the positive responses, i.e. those indicating the existence of data on at least one target species, along with the name and address of the person who should be contacted if more information on the data is desired are also on file.

### III. Annotated Bibliography

As the first step in the search for relevant literature, we conducted a computer search of several of the standard data bases (Table 3). To insure a thorough search, we used current and archaic scientific names and the more widely accepted common names as search identifiers. No attempt was made to limit the search by crossing these identifiers with categorical identifiers (e.g. ecology, life history, etc.). The results of that search were transferred to computer storage and provided a starting point for the bibliography. Each citation produced by the initial search was carefully judged for relevance to the final bibliography, checked for duplication by another data base, reorganized into a standard format, and alphabetized.

#### A. Abstracts

Many of the citations that resulted from the computer search were complete and were accompanied by an abstract, but the majority were not. When information was lacking, we either consulted one of the references listed in Table 4 or ordered a copy of the original document through the Interlibrary Loan Service at the NSTL/NASA Library. We attempted to make the annotations in the Groundfish Bibliography as brief as possible. Therefore, the original author abstracts were usually shortened considerably. The citations in the references cited by each document were checked for potential inclusion in the bibliography.

#### B. Keywords

To assist in the logical selection of keywords and to limit the keywords used to a manageable number, a thesaurus was developed. The thesaurus was based on a hierarchical system of descriptors patterned after the Oceanic Abstracts Thesaurus. The major categories of keywords

Table 3. Computerized data bases searched for groundfish references and the dates of the earliest entries in each data base.

1. BIOSIS - 1969
2. Dissertation Abstracts - 1861
3. Smithsonian Science Information Exchange (SSIE) - latest 2 years.
4. Commonwealth Agriculture Bureau - 1972
5. Aquatic Sciences and Fisheries Abstracts - 1978
6. Oceanic Abstracts - 1964
7. NTIS/Government Reports Announcements - 1964
8. The Fish and Wildlife Reference Service in Denver Public Library
- \*9. Agricola - 1970
- \*10. IRL Life Sciences - 1978
- \*11. Scisearch - 1974
- \*12. Enviroline - 1971
- \*13. USDA/CRIS - 1974

\*The search of these data bases was limited to a trial with an incomplete identifier list. They yielded only duplicates of the citations produced by the other data bases.



Table 4. References consulted to supply information necessary to complete citations.

1. Biological Abstracts printed index.
2. Dissertation Abstracts printed index.
3. Oceanic Abstracts printed index.
4. Who's Who 1978-1979, 130th annual edition, St. Martin's, N.Y., N.Y. 1978.
5. Encyclopedia of Associations, 15th edition, Vol. 1. National Organizations of the U.S. D. Akey, editor. Gale Research Co., Book Tower, Detroit, MI. 1980.
6. Encyclopedia of Associations, 15th edition, Vol. 3. New Associations and Projects. D. Akey, editor. Gale Research Co., Book Tower, Detroit, MI. 1980.
7. World Guide to Scientific Associations and Learned Societies, 2nd edition. M. Zils, editor. R. R. Bowker Co., N.Y., N.Y. 1978.
8. Books in Print, 1981-1982. Vol. 1-2. Authors. R. R. Bowker Co., N.Y., N.Y. 1981.
9. Books in Print, 1981-1982. Vol. 3-4. Titles. R. R. Bowker Co., N.Y., N.Y. 1981.
10. Subject Guide to Books in Print, 1981-1982. Vol. 1-3. R. R. Bowker Co., N.Y., N.Y. 1981.
11. American Men and Women of Science. 12th edition. Vol. 1-6. The Physical and Biological Sciences. J. C. Press, editor. R. R. Bowker Co., N.Y., N.Y. 1972.
12. Ohio College Library Center or the Online Computer Library Center.

were: (1) Organism identifiers, (2) Geographic location, (3) Distribution, (4) Ecology, (5) Fishery, and (6) Life history. Each of these categories was then subdivided into one or two more hierarchal levels. Generally, the most specific (i.e. lowest level) descriptor was used. However, in cases where nearly every term in a category was applicable, the broad categorical term was selected; perhaps along with a few of the more salient lower-level terms. Single-word identifiers and the first word of the two-word identifiers are capitalized.

Organism identifiers are listed separately from the rest of the keywords to facilitate manual scanning of the bibliography. They are organized so that all scientific names of target species are given first and in alphabetic order. These are followed by the applicable common names of the target species in the same order as the scientific names. Next in the sequence are the alphabetized family names of any other fishes prominently mentioned in the cited document. For citations that dealt with a large number of families, the term "Other fishes" was substituted for the long list of family names. The appearance of the family name of one of the target species (e.g. Sciaenidae) in this list indicates that a non-targeted member of the family (e.g. Cynoscion nebulosus) is discussed in the cited document. If the document deals with penaeid shrimp in addition to one or more target species, "Penaeidae" follows the list of family names for fishes. If non-penaeid crustaceans and/or mollusks are discussed in the document, "Crustacea" and/or "Mollusca" terminate the organism identifiers. Scientific and common names of fish species (and families) are those recognized by the American Fisheries Society. The single exception to this is the use of

"Butterfish" for Peprilus burti. Due to the confusion, particularly in the older literature, between P. burti and P. triacanthus, we used the specific name given by the author(s) of the document and did not attempt to distinguish between butterfish and Gulf butterfish.

In most cases, one or more of three regional geographic location identifiers were used. These are "Gulf of Mexico" (the US/Mexico border to the Florida keys), "Southern Atlantic" (the Florida keys to Cape Hatteras), and "Northern Atlantic" (Cape Hatteras northward). These terms are followed by an alphabetic listing of the applicable states identified by their two-letter postal abbreviation. If all states in a region are applicable, the term "all" is appended to the region identifier. For example, the geographic identifiers "Gulf of Mexico - FL, Southern Atlantic - all" indicate that the cited document applies to waters from North Carolina, South Carolina, Georgia, and both coasts of Florida. For a few documents reporting on foreign waters, a general term was used (e.g. Africa). Some citations could not be meaningfully assigned a geographic location, so a keyword such as "Laboratory" may have been substituted for the name of a geographic region.

The remaining four major categories are listed in alphabetic order, as are the lower-level identifiers within each category. Major categories are separated by semicolons; lower-level identifiers by commas.

The Groundfish Bibliography and lists of the keyword identifiers are on file at the Mississippi-Alabama Sea Grant Consortium office and at the Pascagoula Laboratories of the National Marine Fisheries Service.

#### IV. Project Summary

Student accomplishments: During the fall semester of 1981, Ms. Ann Loomis, a Library Science student at the University of Southern Mississippi, was employed part-time to assist in the bibliographic work. Ms. Loomis has since received her Master's degree and is now employed in the Navy Library at the National Space Technology Laboratories. Her efforts in organizing a keyword thesaurus and in locating several hard-to-get-at pieces of information for the bibliography were exceptionally valuable to the project. We hope her education benefitted equally.

Person-hours expended	3850
Dollars encumbered	\$49882
Completion of project objectives (Phase 1)	100%

